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## A CONTRIBUTION TO INDIVIDUAL PSYCHOLOGY.

By NORMAN TRIPLETT, Ph. D., Kansas State Normal.

(By way of introduction the following letter may be reprinted here.)

EMPORIA, Kan., March 1, 1902.

Dear President Hall:

At the close of a recitation in Psychology a few weeks ago, in which the subject of Number Forms was discussed, Mr. Arthur M. Clark, a member of the class, came to me and said that he had a peculiarity of a greatly different sort. He spoke of this as if half ashamed of it, and said that while he had had it all his life, he had kept it a secret and had never before even hinted of its existence to any one. Inquiry disclosed such a remarkable system of dealing with letters that I have made an effort to unravel the matter, and I send you herewith some account of it. It is told in the first person though the facts given have in large part been obtained as the result of much patient questioning. Extensive as seems the matter presented I can verify Mr. Clark's statement that merely the simple skeleton is here given. He says that the ramifications and their uses extend it unendingly, and that it would fill a book. The first impression one gets from it is that it is an incoherent jumble of nonsense, and indeed it is, so far as any practical use is concerned. More careful study, however, shows it to be a system that, for the most part, is logical and consistent with itself, and that any one might learn, at least in its simplest form.

Three aspects are to be noted in the account given. 1. The origin and development of the various forms or contests. It is a life history. In the increasing complexity of the system may be seen the influence of environment on the growing child. His interest in the letters was the wax on which everything left its impression. 2. His attitude toward the subject from the time when he first became conscious of his peculiarity. He has always regarded the matter with a good deal of mystery. He insists, and is impressed with the fact, that the forms of the contests described grew up without conscious attention or formulation, and in operation went through their changes as mechanically as the changes produced by the moving picture machine. His facility in running a word through the succession of stages necessary to his final result is wonderful, though lately it must be done by a conscious effort, he tells me. When I commented on his power in this regard he said he ought to be able to do it when he had seen it going on all his life. The word picture which he carries of many words is a letter group which means nothing to the uninitiated. Call a word and he instantly responds with the combination making up his word form. Formerly there were large numbers of these in his vocabulary, as most words when first learned passed through the changes and kept the form. In some cases the word has been arrested at an intermediate stage. At the present time, though many yet remain, the regular word has come in most cases to take the place of the old combination. 3. The personal character given the letters from the association made with the pictures from which they were learned, and their peculiar habit of appearing in the character of hypnagogic images, if such they were.

Mr. Clark is a good student, honest and of strong religious character, and aside from the matter mentioned would not be considered peculiar. He says that as a boy he was delicate and played by himself a great deal.

Yours very sincerely,

NORMAN TRIPLETT.

When I was a boy of perhaps four or five years of age, my older brother came home from school one day and told me of the way his teacher had given for remembering the spelling of the word "Aaron." It was: "big A jumped upon little a and crushed out 'ron.'" This led me to think of the letters "A" and "a." What relation have they to each other? Why is one larger than the other? It was from questions like these that the conception of a struggle among the letters, as described below, arose in my mind. Another element in the process of endowing the letters with force or personality, I believe, came from the alphabet picture books where the letters are pictured in different characters. From these sources the interest in the letters developed which has been so large a part of my life.

The struggle referred to is not a struggle of the letters as they appear in the alphabet but as they appear in words; that is, it is a war of words. The struggle may take any one of four forms according to the word to be dealt with. The four forms, however, developed at different periods in my life and from different causes. In order to understand the struggles of the letters it is necessary to know the values attached to them. The alphabet appears to me to be divided into series of three letters each, preceded by the capitals A B C, as follows: ABC, abc, def, ghi, jkl, mno, etc. In the series "abc," "a" is worth two of "b" and "b" is worth two of "c." "c" in turn is worth two of "d," the first member of the next series, and so on throughout the other series. "a" and "b" taken together are equal to "Cc," "bc" is equal to "ad," "ac" is equal to "bh," "bd" is equal to "cc," and "cd" is equal to "be," and so on through all the series.

Now in this scheme d, g, j, etc., the first members of the succeeding series are regarded as the descendants of "a." The same relation exists between "b" and e, h, k, etc., and also c and f, i, l, etc. Capital A, B, and C, are considered a degree higher than small "abc," and large A holds the highest possible position in the scale of values. These three capitals are not much used, but capital A in particular is necessary when the method employed in treating a word is the one which reduces all letters to the letter "a." Each series of three letters decreases in value as its distance from ABC increases.

In my different systems of treating the letters of words certain terms are used to designate the various processes and these

require definition and explanation. "Combination" is fundamental. It involves the arrangement of the letters to the best advantage for the purpose required. Three principles are embraced in it: 1. the arrangement of the letters for expansion in the manner described later; 2. placing two letters of the same kind together to make one of the next higher, for example, "cc" equals "b" etc., and 3. is combining a descendant of "a" with a descendant of "c" which would be worth, as said before, two descendants of "b." When two letters are combined to make one of the next higher rank, the single letters lose their own characteristics and assume those of the letter that they are combined to make; thus, in "cc" equals "b" the combination "cc" is treated as "b."

"Expansion" is the term employed for the following process: if, for instance, the syllable "ac" occurs as in "accept," it will expand into "acbd," because, according to my system, "ac" always takes "bd" after it when expansion is used; "a" has the same relation to "c" that "b" has to "d," from their place in the alphabet, as before stated, and the product of the means is always equal to the product of the extremes. So in the word "baby," "ba" would be preceded by "dc" and the reason for this change in position is that "c" or its descendant must always precede "b" or its descendant and the product of the extremes again equals the product of the means. Where in any word, the letters are all used in other combinations, leaving "a" standing alone, the "a" assumes to take a "c" or its descendant and expands into "acbd," or it will take the equivalent if corresponding letters of other series are used. For instance, the word "Bella" will be seen in the mind to take the following form, "lblea." The change of position of the letters "bell" is made because "c" or its descendants must always precede "b" as stated above, and the letters "ll" are descendants of "c." The "a" left standing alone will assume to take "l" for some reason not understood, and the "al" will expand into "albm" and the word becomes "lblealbm," and this is my mental image of the word Bella, and in like manner are treated all words in which the principle of expansion is used.

"Suppression" is a process used in connection with "expansion," and is made use of when the system of expansion produces more letters than is necessary. In expansion four letters are always involved; by suppression this number may be reduced to two. For example, in the word "railroad," since "r" from its place in a series is the descendant of "c," "ar" ("a" of course preceding a "c") may be said to be equal to the letters "bq," since "ac" = "bb" and "ar" will equal "bq," "q" holding the same position as "b" in its series.

Then the word "rail" appears as "bqil," which, when the letters assume their proper order becomes "ibql." The explanation being that, as said before, "i" corresponds to a "c" which must always precede "b," and "l" precedes "q" for the same reason. The word is then seen to be equivalent to four descendants of "a," (for "ib" corresponds to "cb" and so in like manner does "lq,") and "cb" = "ad" and "d" is a descendant of "a," and thus the word "rail" is equivalent to "aaaa." "road" the second part of the word, appears as "ardo." Now the "ar" expands into "arbs" ("r" standing for a "c" and "s" being first in its series and hence standing for an "a"), and the "do" expands into "doep," for some letter must go with "o" that will make their product equal to "d" by some fourth letter which is a descendant of "a" below the second term, *i. e.*, the third and fourth terms, respectively, are the first letters below the first and second terms, respectively. This is a general law or principle true for all cases. By the method explained above "bqil," "arbs" and "doep" are each proved to be equal to four descendants of "a," and by combining the results the entire word "railroad" is seen to equal twelve descendants of "a." This has been reached by the method of expansion. Given a game of words in which "railroad" or any word that makes 12 descendants of "a," is found when the game requires but 10, "suppression" may be brought into play to reduce the number. In the word railroad suppression may be used either on the "do" or on the "ar;" that is, the "ar" may be expanded as "arbs," and the "a" and "s" dropped when the whole word becomes shortened to "ibqlrbdop," and we have the ten descendants of "a" required. This may, in like manner be reduced to eight, by applying the method of suppression to "doep" that is, by the cancellation of "d" and "p," "oe" is left and the word becomes "ibqlrboe." Which form the word will finally take in my mind, however, depends upon the number of descendants of "a" required at the given time in connection with some other word or phrase, for in some instances more than one word is required in developing a certain method. Some words are rigid and furnish just a definite number of descendants of "a," while others, like the word "railroad" used above, are flexible and accommodate themselves to the needs of the given case.

"Promotion" is raising a letter from one series to the one next above in rank. Skipping a series is not permitted; but promotion must be made by moving through one series or group of letters at a time. "Demotion" is reversing the process. The two processes are inseparably connected, promotion of one letter requiring the demotion of another of the same line of descendants, or of the letter used in connection with it.

The object of the processes named is to bring into the same series the letters being combined. For example by expansion in the manner indicated under the explanation of that term, the word daily takes the form "diejalbmj." Suppose we wished the "diej" and the "albm" to be reduced to the same series: Demote the "a" of the second group to "d," its first descendant; the "m" will be promoted to "j" a series above it in rank; the "l" used with the "b" may be promoted to "i," the first series above it, causing "b" to be demoted to "e," the corresponding letter of the series next below; and the "albm" becomes "diej," and hence the form desired as to series.

In "diej," by demoting the "d" to "g," the "j" may be promoted to "g." The process of changing the "d" and "j" to "gg" are simultaneous or seem to be so. Since "ie" is equal to "dj," it also is immediately thought of as "gg," and as the "albm" likewise became "diej" it also dissolves into "gggg" and my mental picture of "daily" becomes "ggggg-gggy."

The principles thus explained are used in several ways and these I call games or contests. These games show a process of evolution in my mind, after using one for a few years till the novelty wore off I would take up another. I did not originate these contests, however, not consciously at least. They simply grew. The variations which have appeared seem to have been suggested by different causes.

#### CONTEST I.

A few years after I had begun to speculate about the mysterious character of letters as mentioned above (I presume I was about seven or eight years old), my grandfather told me a story, the thought of which was that no force exists so great but a greater may be found. I think it was a poem, and as I remember it an ant was devoured by a dove which in turn fell a prey to a hawk. The hawk was then captured by an eagle, and the eagle next fell before the arrow of a hunter. Suddenly this game presented itself to my mind as an illustration of the thought of the poem.

It consisted of a contest between two or more words where several words stand for the same thing. As a result of the contest the word that won out seemed to recommend itself for preference among synonyms.

Recalling the division of the alphabet into series of three letters as "abc," etc., in this contest every descendant of "a" or letter which stands in the position of "a" in a series, is thought of as "a," every descendant of "b" is thought of as "b," and every descendant of "c" is thought of as "c." Other letters

are not taken into consideration as such, but are regarded as so many of "a," "b," or "c."

Let us take for illustration "mind" and "brain." Though these words are not synonyms, I formerly thought of them as such. These words became engaged in one of the many contests of that period, to determine which should have the preference in use. Their values were found as follows: the letters in the word "brain" took the order "a-rb-in." Since "r" and "i" are descendants of "c," and "n" the descendant of "b," "r" and "i" preceded "b" and "n," as a "c" must always precede a "b" as stated earlier. Making the proper substitutions for the values of the letters we had "a-cb-cb." Since "cb" = "ad," the word equals "a-ad-ad," but since in this form of contest all descendants of "a" are considered as "a" the word became "aaaaa." If the word reduced to five of "a" or a multiple of it, the combining process was indeterminate. If carried further the process was as follows: "aa" would combine into a "c," so two pairs of "a" from the five were each combined into a "c" giving "acc" and the process could be carried on with the three letters unendingly. At present this is not done, but it was followed till the principle was seen.

The order of the letters in the other contestant (the word "mind") remained unchanged, because the combinations occurring in it were already perfect for this contest. "m" is a descendant of "a," "i" is a descendant of "c," "n" is a descendant of "b" and "d" is a descendant of "a." The word is practically the same, therefore, as my regular group "acbd." Since "cb" = "ad" the word is equal to "ad-ad" or "aaaa." My mental picture of this word is regular, that is, I see the word "mind" because the letters stand in their proper order.

When a word has been reduced to "a"s, the number it contains whether odd or even, must remain so throughout the entire process. Sometimes the word will not reduce to "a"s, in this case the value must be determined by other methods. A word that reduces to four "a"s as was true in the case of "mind," is inferior, because to continue you must reduce both pairs of "a"s to "c"s, so the "aaaa" would become "cc" but this is equal to "b" and an end is reached; while in "brain," as was seen, the combinations may go on indefinitely and it is therefore a better word to use.

The contest just described is an actual one. A teacher once told me to "use my brain" and at another time to "use my mind" in the performance of some mental task, and thinking they were synonyms I wondered which was the better word to use. The words were therefore tested by the method described and as a result I decided to use my brain. Such contests were

always going on in my mind but I remember this case particularly.

## CONTEST 2.

This contest is similar to the first. I think it originated when I was about nine or ten years old and had begun the study of United States money. The idea of fives and tens, on which the system is based, appears to have been carried over and merged with my interest in the letters. The fact that five is the number most agreeable to me seems the result of the former connection. I like numbers in which the sum of the digits is five or a multiple of five, as 1900, 122, etc. Numbers below 100 are always thought of as a certain number of fives and a remainder. Other than as stated I have no number form.

The object of this contest is to reach a balance, or to reduce words to five "a"s or a multiple of five. Here, also, the descendants of "a," "b" and "c" are thought of as "a," "b" and "c," just as in the previous contest. By proper combination five "a"s will become "A," and the value of a word is determined by the number of "A"s and the fractions thereof. "a" is considered worth one-fifth of "A," "b" is worth one-tenth of it, while "c" is worth practically nothing on the last round, since if a "c" is present the "ac" equals "bb" and "bb" equals "a" for two-tenths equals one-fifth. The "c" is therefore practically eliminated.

To illustrate this form of contest take the words "diet" and "food." "Diet" appears as "di-et." "di" expands and becomes "diej" and then the word appears as "diejet." The "diej" is equal to "aaaa," for "d" and "j" are each descendants of "a" and therefore in this system equal to "a." Further, "ie" is equal to "dj," by reason of its position, "i" being a descendant of "c" and "e" a descendant of "b" and therefore equal to "aa." Since "e" and "t" are descendants of "b" they are from their mathematical relations, when combined, equal to "a" and thus the word "diet" equals "aaaaa" which are equal to "A."

Taking the other contestant, "food," the word first assumes the form "doof" the "f" and the two "o"s are each descendants of "c," and "d" is a descendant of "a" so the word next appears as "acc." The "a" taking its proper place before "c." The "a" taking its proper place before "c" is combined with one "c." The "ac" thus combined is equal to "bb" and the word then appears as "cbcb," by the two "c"s taking their usual place before the "b"s. As "cb" equals "ad" the form changes to "adad." Since "d" is a descendant of "a" the word becomes "aaaa," which is less than "A" by one-fifth. "Diet" is therefore the winner in the contest



and is to be chosen in a selection of synonyms. In this case, however, though "diet" was thought to be the proper word, common usage and other considerations prevented my using the word very much. But in general my choice of words is determined in the manner indicated.

### CONTEST 3.

This contest had its origin when I was about the age of ten or twelve, after I had learned the game of checkers. Its object is to promote as large a number as possible of the letters of a word to "A." In order to promote one letter another letter must be demoted as far as the first is promoted. The letter must not be eliminated, however, *i. e.*, promotion and demotion must remain within the limit of the alphabet. One vantage play in checkers is to get as many kings as possible, so, in this game, a letter promoted to "A" is considered a king and the steps taken by a letter to gain the rank of "A" are thought of as moves toward the king's row. The process involves the changing of the letters to "a" descendants, then follows the possible promotions to "A." The word having the most "A"s is the winner.

I was told that all good generals were good checker players, so the first words entering into this form of contest were the names of generals. For instance, the words Grant and Lee, were thus used. Grant takes the form "ag-rn-t." In this combination "rn" equals "ms" because "rn" is the central part of the expansion "mrns" made by expanding "mr" in its usual way, as explained under the term "Expansion" and its equal "ms" is substituted for it. The word "Grant," therefore takes the form "agmst." Demotion and promotion produce the following changes: "s" is demoted to "v," and "a" is promoted to "A"; "m" is demoted to "v" and "g" is promoted to "A"; the final form of the word "Grant," therefore, becomes "AAvvt." The word "Lee" takes the form "le-e." The "le" is the central part of the expansion "dlem," made by expanding "dl," and thus "dm" is equal to "le" and is substituted for it. The word "Lee" now takes the form "dme." The "m" is demoted to "s" and "d" is promoted to "A" and the group becomes "Ase." We thus see that the word "Grant" is the winner, as it equals "AAvvt" while the word "Lee" equals "Ase."

Another element that seems to have entered into this third form of contest was drawn from political life. It was about this time that political matters began to arouse my interest. It was noticed that candidates for office were generally promoted step by step, and that the success of one candidate meant the dis-

placement of some other man. Thus the names of candidates and political leaders also became material for contests.

#### CONTEST 4.

These contests, as has been said, have been an evolution. This fourth and last is the highest form, and to me the most interesting. It seems to have originated a few years ago, at the time when I first watched a football game. I did not understand the game, but saw that the men were placed to the best advantage, and as this always seemed to be true of the letters, a contest was evolved in my mind. After I had slept a night or two, it worked itself out. I did not consciously do any formulating of the game. For a long time I enjoyed watching the moves and changes of the new contest for the novelty of the old games had from long use worn away.

Football seemed to me a mere trial of strength, though the men appeared to be massed at one point, and when this new contest came up the letters had the same characteristics as the players. The object of the contest was to convert the letters of opposing words into descendants of "a," to bring them as near to "a" as possible and yet remain together.

As the games of football were between educational institutions, I at first found myself working with the names of these institutions; as Yale vs. Harvard, Princeton vs. Dartmouth, University vs. Normal, etc. In the first named, Yale vs. Harvard, the letters of the first word happen to be such that they are permitted to retain their regular order, "y-al-e." The "al" is a combination that expands always into "albm" and the word becomes "Yalbme." The next change that I saw was the combination "Ygggge." Those grasping the principle will see that "lb" is equal to "am," by promoting the "m" to "g" the "a" is demoted to "g" making similar changes with the "l" and "b," and massing, our four group "albm" became "gggg."

In the case of Harvard the letters also retain their natural order and the word appears as "H-ar-v-ar-d." Each "ar" being the nucleus for an expansion becomes in the regular way "arbs" and the word Harvard is transformed into "Harbs-varbsd." Now since "rb" equals "as," by promotion and demotion, each pair becomes equal to "jj;" and by massing we have the aggregation which was seen as the third word change: "Hjjjjvjjjjd." To reduce this to "g"s, the principal element in the combination resulting from the word Yale, we promote each alternate "j" to "g" and demote the remaining "j"s to "m." Placing like letters together we have "Hggggvmmmmmd." Harvard is the stronger word, for the result shows as many "g"s as in Yale and of the remaining letters more are of a

higher order. This result is not attained because the original word had more letters than its antagonist Yale but because its letter combinations happen to give more opportunities for expansions. It is this factor, indeed, rather than the length of the word which determines the outcome in a test of strength. Let us take to illustrate this the words Normal containing six letters and University containing ten. Applying the method explained we find that Normal is the stronger word for it contains more letters of a higher order than the latter. The form for Normal being "jjjjjmmpp," that for University being "mmmmmvvv."

The whole subject in its various forms, as outlined above, may be only a substitute for the day dreams so common among boys. I spent the time with this that, I presume, most boys spend in day dreaming. I remember having only two or three day dreams. It has never bothered me in study hours for as soon as I wish to study it vanishes leaving my mind clear.

In order to develop the results attained with words it was only necessary to direct the attention to the words when the letters seemed to take their different forms much as the images of a vitascope. A word in process of change did not take its ultimate form at one move but the changes were made as explained in the contests, and each step was separate and distinct, though very rapid, as the final result seemed almost instantaneous. After the changes began my mind seemed to be passive and I was merely an onlooker and not a conscious director.

Until I was ten years of age I was content to watch the contests without trying to inquire into their meaning. I then began to question myself as to the meaning of it all. No solution was reached. The idea, however, came to my childish mind to make the following application of it: I resolved to cram myself with facts and to learn all their was to know, thinking that when I was asked a question I could direct my attention to it and the answer would unravel before my mind's eye without effort on my part. In accordance with this plan I conceived the idea of mastering the text-books at school and at the same time of acquiring other subjects at home, beginning with the Bible. I thought that by memorizing everything as I went along, it would be unnecessary to give it further thought as it would present itself of its own accord when needed. The plan was carried out most completely with History. Soon I could repeat the account given in Barnes's History of the Revolutionary War, beginning with "England treated the settlers as an inferior class of people," etc., and continuing to the close of the war. I committed portions of the Bible in the same way. I expected to memorize the whole of it and thus become an authority on the subject. So in other fields of knowledge.

This idea thus became an incentive to study and I worked faithfully from about ten to fourteen when the reaction set in. I saw that the task was too great and became discouraged. I decided that this was not the solution of my problem and cast about for another. By centering my mind upon the problem for some time the means of solution would seem to accumulate and I thought that if I could hold my mind on it long enough that all the material for solution would be gathered up and then must unravel before my mind. At times I would appear to be on the verge of success, but the thought of being so near the goal would divert my mind and the accumulated material would roll up in a ball and burst as a bubble. After an effort of this sort it would be fruitless to attempt it again for a week.

For two or three years past I have endeavored to rid myself of the whole matter, as I gave up any possibility of a solution and thought it useless to have the mind burdened longer. I found it difficult to do so, however, and my mind continued to be occupied with these peculiar contests until I began to write about the subject some weeks ago, since which time it has cost an effort to think of it all. The word formations now require a conscious process, *i. e.*, they will not arrange themselves of their own accord as formerly.

Another phase of my deep interest in the letters and especially the letter "a" remains to be mentioned. From the very first the letters seemed endowed with life, and for many years on retiring at night they would all gather around my bed. Each letter always retained its own personal characteristics. These they seemed to have derived from the letters in the A B C picture books given me. When they first began to appear I could see the letters shining through them; these faded in course of time and only the figures were left. Some of the letters were brownie-like figures, others were animals. "a"s body was the shape of small "a," "H" was a hog, "K" the "kicker"—always ran around with his right leg held stiffly in front, etc. After assembling they would all perform the most amusing acts which would be remembered and laughed at for days. I never mentioned the matter to any one else, however, because I dreaded that people would think I was silly.

It was long before I discovered that I was "a" or rather that "a" was impersonating me. I noticed that while the other letters were going through their own particular performances "a" often took the part of an observer. He was a special character and his many funny actions were differently regarded by me. I could see that he went through at night what I had done during the day. If I had any mishap "a" would incur the same misfortune at night. Some of these are still vivid in memory, many are forgotten. I remember riding

home on a load of hay over a rough road, and when I had retired I saw "a" perched upon a big, jolting load of hay hanging on to the center pole for dear life. One day I lost my temper with a schoolmate. The teacher gave me a severe lecture and told me that if I did not control myself my head would grow out of shape. When the figures appeared that night I noticed that "a" was in great trouble and was not joining in the good time the others were having. His head had become elongated and he would take his hat off from time to time and groan. Subsequent fits of temper on my part always caused further additions to his long head. On one occasion he thought that if he could tie his hat down tightly to his head he could prevent any further swelling. I became angry at something, however, and his growing head lifted the hat so high that it caused the string under his chin to choke him. He prevailed upon "e" who was a dancing lady, to cut it with her scissors. All this doubtless seems fanciful to others but it was very real to me. It was an ever-changing drama enacted for my own especial benefit and I enjoyed it. The figures would at times become engaged in quarrels and would do and say very funny things. I could hear the talking very distinctly.